

REMARKS

Claims 1-24, all the claims pending in the application, stand rejected upon informalities and on prior art grounds. Claims 1-24 stand rejected because the claimed invention is directed to non-statutory subject matter. Applicants respectfully traverse these rejections based on the following discussion.

I. The 35 U.S.C. §112, Second Paragraph, Rejections

Claims 1-24 stand rejected under 35 U.S.C. §112, second paragraph. Claims 1-3, 6-9, 12, 13, 19-21 and 24 have been amended in order to overcome these rejections. Moreover, the Applicants note that all claims, as amended, are properly supported in the specification and accompanying drawings, and no new matter is being added. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

II. The 35 U.S.C. §101 Rejection

Claims 1-24 stand rejected under 35 U.S.C. §101 for being directed to non-statutory subject matter. Specifically, the Office Action states that “the methods claimed appear to be directed towards abstract ideas and do not produce a useful, concrete and tangible result.” The Applicants traverse these rejections because the computer-implemented method of “mining for association rules” necessarily produces a useful, tangible and concrete result: recovery of an association rule while controlling privacy breaches of individual transactions.

Specifically, as the amount of personal information contained in digital databases increases, privacy concerns have also increased (see paragraph [0006]). These concerns extend to tools, such as data mining, that are used to efficiently recover valuable, non-obvious information (e.g., association rules) from the databases (see paragraph [0004] of the specification). The present invention, as defined in amended independent claims 1, 7, 13, and 19, discloses a computer-implemented method of data mining for association rules, while simultaneously controlling privacy breaches of individual transactions within

the databases (see paragraphs [0027-0028] and [0038-0043]). This is not solely accomplished by performing a mathematical algorithm on a dataset. Rather it is accomplished by taking the original dataset and producing a second different randomized data set (by randomly dropping true items from each transaction in the original dataset as well as randomly inserting false items into each transaction in the original dataset). Then, the nonrandomized support of an association rule in the original dataset is estimated based on the randomized support of that association rule in the randomized dataset in order to recover the association rule and control privacy breaches of the individual transactions. Thus, the useful, tangible and concrete results of the invention are a new randomized dataset which in turn allows the recovery of an association rule that preserves the privacy of individual transactions (see paragraph [0034]) (see State Street Bank & Trust Co. v. Signature Financial Group, 149 F.3d 1368 (Fed. Cir. Jul. 23, 1998)).

The Applicants note that all claims, as amended, are properly supported in the specification and accompanying drawings, and no new matter is being added. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

III. The Prior Art Rejections

Claims 1-24 also stand rejected under 35 U.S.C. §102(a) as being anticipated by Evfimievski, "Randomization in Privacy Preserving Data Mining," December 2002, ACM SIGKDD Explorations Newsletter, Vol. 4, Issue 2, pp. 43-48 (referred to hereinafter as "Randomization in Privacy Preserving Data Mining" (December 2002)). Applicants respectfully traverse these rejections because the relevant portions of "Randomization in Privacy Preserving Data Mining" (December 2002) were derived from the following work of the applicants, which formed the basis for the present application: Evfimievski, R. Srikant, R. Agrawal and J. Gehrke, "Privacy Preserving Mining of Association Rules," Proc. Of 8th ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD), July 2002 (referred to hereinafter as "Privacy Preserving Mining of Association Rules" (July 2002)).

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More particularly, Alexandre Evfimievski is the sole author of "Randomization in Privacy Preserving Data Mining" (December 2002). "Randomization in Privacy Preserving Data Mining" (December 2002) was an overview of research in the field of privacy preserving data mining and was derived from several papers. The relevant portions that were cited in the Office Action as the basis for the rejection of all pending claims were specifically derived from "Privacy Preserving Mining of Association Rules" (July 2002). That is, the Office Action refers to the discussion of "randomization" on pages 43-45 of "Randomization in Privacy Preserving Data Mining" (December 2002) as the basis for the rejection of all pending claims. The source of the information contained in the randomization discussion is cited as "Privacy Preserving Mining of Association Rules" (July 2002) (see page 43, right column, last paragraph, line 1 and page 45, left column, line 24) and further acknowledged by the author, Alexandre Evfimievski, by declaration under 35 U.S.C. §1.132 (See Exhibit A).

"Privacy Preserving Mining of Association Rules" (July 2002) was published on July 23, 2002 in conjunction with The Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining that was held July 23-26, 2002. Ramakrishnan Srikant, Rakesh Agrawal, Johannes Gehrke and Alexandre Evfimievski are all co-authors of "Privacy Preserving Mining of Association Rules" (July 2002).

This paper, "Privacy Preserving Mining of Association Rules" (July 2002), was the basis for the present patent application (U.S. Patent Application Serial No. 10/624,069, filed on July 21, 2003) and specifically discussed the invention defined by claims 1-24. Rakesh Agrawal, Ramakrishnan Srikant and Alexandre Effimievski are joint inventors of the invention defined by claims 1-24 in the present application. Although Johannes Gehrke is listed as a co-author on "Privacy Preserving Mining of Association Rules" (July 2002), he acknowledges by declaration under 35 U.S.C. §1.132 (See Exhibit B) that he is not an inventor of the invention defined by claims 1-24 of the present application.

Therefore, the supporting Exhibits A-B establish that the relevant portions of the publication, "Randomization in Privacy Preserving Data Mining" (December 2002),

originated with or were obtained from the applicants own work (i.e., the work of the joint inventors, namely, Rakesh Agrawal, Ramakrishnan Srikant and Alexandre Effimievski). Consequently, the publication, "Randomization in Privacy Preserving Data Mining" (December 2002), should be removed as a reference (see MPEP 2132.01, Ex parte Hirschler, 110 USPQ 384 (Bd. App. 1952) and Ex parte Kroger, 219 USPQ 370 (Bd. Pat. App. & Int. 1982).

In view of the foregoing, the Examiner is requested respectfully requested to reconsider and withdraw the rejections.

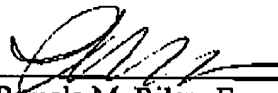
II. Formal Matters and Conclusion

Consequently, with respect to the rejections of the claims under 35 U.S.C. §101 and §112, the claims have been amended to overcome these rejections. Furthermore, with respect to the rejections of the claims under 35 U.S.C. §102(a), the Applicants submit that the prior art of record should be removed as a reference. In view of the foregoing claims 1-24 are in condition for allowance and the Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-09-0441.

Respectfully submitted,

Dated: 4/11/06


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